

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

POWER INTEGRATIONS, INC., a  
Delaware corporation,

Plaintiff,

v.

FAIRCHILD SEMICONDUCTOR  
INTERNATIONAL, INC., a Delaware  
corporation, and FAIRCHILD  
SEMICONDUCTOR CORPORATION, a  
Delaware corporation,

Defendants.

C.A. No. 04-1371 JJF

**DECLARATION OF MIKE SHIELDS**

I, Mike Shields, declare as follows:

1. I have been engaged as an expert by Power Integrations, Inc. ("Power Integrations") to provide opinions on issues related to Power Integrations' U.S. Patent No. 4,811,075 ("the '075 patent").
2. My opening expert report addressed Fairchild's infringement of the '075 patent and discussed many of the disputed terms in the '075 patent, but it did not address every claim construction issue as it was not necessary to do so for my infringement analysis. I therefore provide this declaration to clarify the meaning of a few of the terms of the '075 patent as they would be understood by one of ordinary skill in the art.
3. As noted in my opening expert report, the art related to the patent at issue in this case involves high-voltage MOS transistors, and methods of fabricating the same. One of ordinary skill as of 1987, when the application for the '075 patent was filed, would have had at least a bachelor's degree in electrical engineering, or its equivalent, as well as the equivalent of at least two years of practical experience with MOS transistors, semiconductor fabrication processes, or related technologies.

4. There is nothing ambiguous about the term “said top layer” as used in claim 1 of the '075 patent. The recited “top layer” is clearly the “surface adjoining layer” introduced just before and which is described as being “on top of” the extended drain region, and it would have been understood as such by one of ordinary skill in the art.

5. Claim 1 of the '075 patent goes on to recite that the top layer and the substrate are “subject to application of a reverse-bias voltage.” I have reviewed both parties’ proposed constructions for this limitation, and in the context of the '075 patent, Power Integrations’ proposed definition of reverse bias (“a voltage applied across a rectifying junction with a polarity that provides a high-resistance path”) is more technically accurate than Fairchild’s proposed construction (“Experiencing a bias voltage applied to a semiconductor junction with polarity that permits little or no current to flow”). Even though Power Integrations’ definition is technically accurate, it does not really serve to make the claim more easily understandable to one who is not of ordinary skill in the art. In the context of the device disclosed in the patent, one of ordinary skill in the art would understand the “reverse-bias” limitation simply refers to connecting the top layer and the substrate together for the purpose of “grounding,” because it is the connection to the ground reference which is what allows the application of the reverse-biasing voltage to these parts of the transistor. Thus, I believe it would be most helpful, and most consistent with the understanding of one of skill in the art, to construe “subject to application of a reverse-bias voltage” to mean that “the surface adjoining layer of material and the substrate recited in the claims are connected in some way to ‘ground.’”

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 22d day of December, 2005, at Saratoga, California.

  
\_\_\_\_\_  
Mike Shields

**CERTIFICATE OF SERVICE**

I hereby certify that on December 28, 2005, I electronically filed the **DECLARATION OF MIKE SHIELDS** with the Clerk of Court using CM/ECF which will send notification of such filing(s) to the following individuals. A copy of this document was also served by hand on these individuals on this date.

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I hereby certify that on December 28, 2005, I have caused to be e-mailed and sent via Federal Express, the document(s) to the following non-registered participants:

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/s/ William J. Marsden, Jr.  
William J. Marsden, Jr.